

REMARKS

Claims 1-6 and 8-21 are all the claims presently pending in the application. Claim 21 has been added. Claims 1, 12, and 21 are independent.

These amendments are made only to more particularly point out the invention for the Examiner and not for narrowing the scope of the claims or for any reason related to a statutory requirement for patentability.

Applicants also note that, notwithstanding any claim amendments herein or later during prosecution, Applicants' intent is to encompass equivalents of all claim elements.

Claims 1-6, and 8-20 stand rejected under 35 U.S.C. § 103(a) as being obvious over the Kato reference (Japanese Patent Document No. 9-254821) in view of the Notake et al. reference (U.S. Patent No. 6,006,626).

This rejection is respectfully traversed in the following discussion.

I. THE CLAIMED INVENTION

The claimed invention is directed to a pedal bracket structure. The pedal bracket includes an outwardly swollen rigidity supplementing portion toward the front end portion of the pedal bracket, and a brittle portion at a rear side of the rigidity supplementing portion.

As explained by the present specification, a first conventional pedal support structure includes a back plate 140 (e.g., see Figure 6 of the present application) just above a hole in a pedal bracket 110 which improves longitudinal rigidity of the pedal bracket. The hole is provided to allow the bracket to crush easily in the event of a front end collision. However, there

is a risk that the back plate 140 will deteriorate the deforming promoting function of the hole in the pedal bracket.

As shown in Fig. 7 (which corresponds to JPA 9-25821 to Kato, cited by the Examiner and discussed below), a second conventional pedal support structure includes pedal bracket 222 which includes an opening which deforms and is rigidly supported at a bracket side sliding portion 238 which must be attached to a vehicle side sliding member 241 at an inclination angle θ . However, the second conventional pedal support structure requires a number of components and further requires extensive modifications to the vehicle side to include a vehicle side sliding member at the inclination angle.

By contrast, the present invention solves the problems of the conventional structures by providing a pedal bracket which includes an outwardly swollen rigidity supplementing portion toward the front end portion of the pedal bracket, and a brittle portion at a rear side of the rigidity supplementing portion. In this manner, with only a simple modification, the rigidity of the pedal bracket during operation is assured while deformation at the brittle portion is achieved during impact absorption.

II. THE PRIOR ART REJECTION

The Examiner alleges that the Notake et al. reference would have been combined with the Kato reference to form the claimed invention. Applicants submit, however, that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention.

Applicant submits that the Examiner can point to no motivation or suggestion in the references to urge the combination as alleged by the Examiner.

The Examiner alleges that it would have been obvious to modify the bracket structure that is disclosed by the Kato et al. reference to include the bead 108 that is disclosed by the Notake et al. reference “in order to provide increased rigidity so that any further deformation caused by collision may be prevented and thus lowering the repairing (sic) cost.”

Firstly, contrary to the Examiner’s allegation, the bead 108 does not lower the repair cost by preventing deformation. Rather, as is clearly shown in Fig. 14 of the Notake et al. reference the bead 108 forms a part of the pedal bracket 100 which is deformed beyond repair at the opening 106. Thus, the fact that the bead 108 resists and/or prevents deformation of a portion of the bracket 100 adjacent to the bead 108, the bead 108 does not prevent the bracket from deforming beyond repair at the opening 106 and, therefore, cannot reduce repair costs.

Secondly, none of the applied references teaches or suggests that a bead 108 has any affect at all upon the cost of repair. Rather, and in stark contrast to the Examiner’s allegations, the Notake et al. reference very clearly explains that the bracket 100 is designed to deform at opening 106 while simultaneously the rear portion of the bracket 100 at slotted portion 118 slides along the guide rail 116. The guide rail 116 guides the slotted portion 118 of the pedal bracket 100 downward, as shown in Figs. 13 and 14, and to the side, as shown in Figs. 14-15. The purpose of sliding the slotted portion 118 of the bracket 100 downward and to the side is to move the pedal away from an occupant and to the side as shown in Figs. 14-15. The only reason that the pedal is guided away from an occupant and to the side is because the pedal bracket maintains

its structural integrity where the pedal 10 is pivotally connected to the pedal bracket 100.

Therefore, the bead 108 is provided to maintain the structural integrity of the pedal bracket where the pedal 10 attaches to the pedal bracket 100.

In other words, the only reason for providing the bead 108 that is disclosed by the Notake et al. reference is to maintain the structural integrity of the pedal bracket at a portion that attaches to the pedal 10 so that the movement of the pedal 10 is accurately controlled while the slotted portion 118 of the pedal bracket 100 slides along the guide rail 116 and while the opening 106 collapses in a frontal impact.

Therefore, contrary to the Examiner's allegation, not only does the bead 108 have absolutely no effect on the cost of repair, but the Notake et al. reference clearly explains that the bead 108 is provided to accurately control the movement of the pedal in a frontal impact.

Thirdly, the pedal bracket structure that is disclosed by the Kato reference does not teach or suggest a guide rail. Therefore, since the bead 108 is only provided to control the motion of the pedal through the use of a guide rail as disclosed by the Notake et al. reference, there is no motivation to modify the Kato reference to include the bead 108.

Fourthly, the Examiner's proposed modification of providing a bead 108 would not function in the manner that the Examiner has alleged. Rather, the bead 108 that is disclosed by the Notake et al. reference clearly has a longitudinal extent which is greater than the longitudinal extent of the portion of the pedal bracket disclosed by the Kato reference that the Examiner alleges corresponds to the increased rigidity portion. Thus, the bead 108 that is disclosed by the Notake et al. reference could not be positioned at the portion of the pedal bracket disclosed by the

Kato reference that the Examiner alleges corresponds to the increased rigidity portion.

Indeed, the only possible manner that the bead 108 that is disclosed by the Notake et al. reference could be incorporated into the portion of the pedal bracket disclosed by the Kato reference that the Examiner alleges corresponds to the increased rigidity portion would be to position the bead 108 vertically as is shown, for example, in Fig. 8 rather than horizontally as shown in Fig. 13. However, as is clearly explained by the Notake et al. reference a vertically oriented bead 90 does not function to increase rigidity, rather, a vertically oriented bead has a “low rigidity” (col. 11, line 62 - col. 12, line 4). Indeed, the Notake et al. reference clearly explains that a vertically oriented bead is provided to cause the pedal bracket to collapse (col. 12, lines 32 - 52 and Fig. 11).

Therefore, the Examiner’s proposed modification of providing a bead as disclosed by the Notake et al. reference to the forward portion of the pedal bracket that is disclosed by the Kato reference would lower the rigidity rather than increase the rigidity and would clearly not operate in accordance with the Examiner’s allegations.

Even assuming arguendo that one of ordinary skill in the art would have been motivated to combine these references, the combination would not teach or suggest each and every element of the claimed invention.

The Kato reference does not teach or suggest a pedal bracket which includes an outwardly swollen rigidity supplementing portion toward the front end portion of the pedal bracket. As noted above, conventional pedal structures have potentially reduced the ability of the pedal bracket to deform under impact by providing a back plate or have required substantial

modification of the vehicle side mount to provide adequate pedal operating rigidity.

By contrast, the present invention solves the problems of the conventional structures by providing a pedal bracket which includes an outwardly swollen rigidity supplementing portion toward the front end portion of the pedal bracket. In this manner, with only a simple modification, the rigidity of the pedal bracket during operation is assured while deformation at the brittle portion is achieved during impact absorption.

As mentioned above, the Kato reference is the same pedal support bracket shown in Fig. 7 and described in detail by the present application. Even if the Examiner attempts to equate hole 26-2a in a pedal bracket 22 with the brittle portion of the claimed invention, contrary to the Examiner's allegations, the Kato reference does not show an outwardly swollen rigidity supplementing portion which is formed in the front end portion of the bracket. Such a feature in the claimed invention is important for a simple modification which assures the rigidity of the pedal bracket during operation while deformation at the brittle portion is achieved during impact absorption.

The Examiner alleges that the "beam of material that constitutes the vertical leg of the triangle in Figure 11 is a rigidity supplementing portion." However, as explained in the present application, that "beam of material" does not rigidly support the pedal enough to avoid the lack of a rigid feeling during the normal pedal operation and there is a risk that the operability of the pedal is deteriorated.

Indeed, as explained in the present specification, the pedal bracket disclosed by the Kato reference provides a bracket side sliding portion 238 at an upper end of the pedal bracket 222 to

provide sufficient rigidity. This bracket side sliding portion 238 detachably attaches to a vehicle side sliding portion 241. The connection between the bracket side sliding portion 238 and the vehicle side sliding portion 241 provides the rigidity to the pedal bracket which is not provided by the “beam of material” referred to by the Examiner.

In other words, the designers of the pedal bracket disclosed by the Kato reference realized that the “beam of material” referred to by the Examiner was not sufficient to rigidly support the pedal enough to avoid the lack of a rigid feeling during the normal pedal operation and there is a risk that the operability of the pedal is deteriorated. Therefore, the designers supplemented the rigidity of the pedal bracket by providing a bracket side sliding portion 238 to the pedal bracket and detachably attaching the bracket side sliding portion 238 to a vehicle side sliding portion 241.

However, as explained in the present application, the addition of the bracket side sliding portion 238 and a vehicle side sliding portion 241 increases the number of components for the pedal bracket, requires a large modification to the mounting portion of the vehicle body to accept the vehicle side sliding portion 241 and, as a result, significantly increases the cost of production.

In stark contrast, the present invention provides a pedal bracket with sufficient rigidity during pedal operation without increasing the number of components, requiring extensive modification to the vehicle body and without increasing the cost of production. The present invention provides these benefits which the pedal bracket disclosed by the Kato reference is incapable of providing.

The Notake et al. reference does not remedy the deficiencies of the Kato reference. The

Notake et al. reference does not teach or suggest an outwardly swollen rigidity supplementing portion which is formed in the front end portion of the bracket. Rather, as clearly shown by Fig. 13 of the Notake et al. reference the bead 108 is provided above and behind the opening 106. As explained in detail above, the Notake et al. reference clearly explains that the bead 108 must be provided behind the opening 106 so that the structural integrity of the pedal bracket to which the pedal 10 is mounted is ensured so that the movement of the pedal is accurately controlled to move down and to the side in a frontal impact.

Therefore, the Examiner is respectfully requested to withdraw the rejection of claims 1-6 and 8-20.

III. FORMAL MATTERS AND CONCLUSION

In view of the foregoing amendments and remarks, Applicant respectfully submits that claims 1-6 and 8-21, all the claims presently pending in the Application, are patentably distinct over the prior art of record and are in condition for allowance. The Examiner is respectfully requested to pass the above application to issue at the earliest possible time.

Should the Examiner find the Application to be other than in condition for allowance, the Examiner is requested to contact the undersigned at the local telephone number listed below to discuss any other changes deemed necessary in a telephonic or personal interview.

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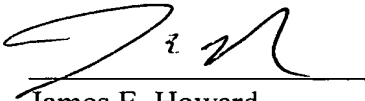
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The Commissioner is hereby authorized to charge any deficiency in fees or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

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